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Home Economics Bibliography 5

HOUSEHOLD REFRIGERATION  
A Partial List of References

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## FOREWORD

As suggested by the title, this is to be regarded as a partial list of references on household refrigeration and in no sense as a complete bibliography. It has developed in response to many requests which have come to the Bureau of Home Economics for information concerning various aspects of this subject. The list reflects the fact that as a subject of general interest, household refrigeration is still young. The earliest reference included is dated 1913.

The list has been restricted to articles and publications in English, nearly all of which were published in this country. No attempt has been made to review all the early articles on this subject. The references are arranged under subject headings, with brief annotations. Included among them are a number that are concerned mainly with theory, others with the results of research, and a few with trade problems. In addition there are several which discuss in popular form the facts about household refrigeration which are of special interest to the homemaker. Several references concerned primarily with commercial installations have been included because they contain material which has a distinct bearing on the problems of household refrigeration. It is hoped that this list will indicate the general scope of the subject, and show the very great need for further research in this important field.

July, 1928

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## BIBLIOGRAPHY

### (1) Beard, B. B.

1927. Electricity in the home. 168 p. New York, Workers' Education Bureau Press.

This bibliography was prepared by Miss Beard and members of the graduate department of social economy and social research of Bryn Mawr College. References on electrical devices for refrigeration are given on pages 126-132. With the exception of a few articles which have appeared since January 1, 1926, the references cited were published between January 1, 1915, and January 1, 1926.

### (2) Bercaw, L. O.

1925. Refrigeration and cold storage. U. S. Dept. Agr. Library. Bibliographical Contributions No. 10, 58 p. [Mimeographed.]

A selected list of references covering the years 1915-1924 and the early part of 1925, concerned chiefly with commercial refrigeration.

### (3) Committee on the Relation of Electricity to Agriculture.

1928. Electricity on the farm and in rural communities. Committee on the Relation of Electricity to Agriculture Bul. 4 (1), 136 p., illus. Chicago.

Bibliography is given on pages 131-134. Concerned chiefly with use of electricity in farming operations, but contains some material on household refrigeration.

### (4) United States Department of Commerce. Bureau of Standards.

1926. Information on refrigeration. U. S. Dept. Com., Bur. Standards, Letter Circ. 30, rev., 10 p. [Mimeographed.]

Mainly for commercial installations, but contains some references on household refrigeration.

## ELECTRIC REFRIGERATION

### (5) Anonymous.

1925. What of the electric refrigerator? Sci. Amer. 133: 194.

National Electric Light Association report is cited and figures are quoted to show the comparative cost of refrigeration with ice and with electricity.

### (6)

1927. Kelvin discovered basic principles of refrigeration. Elect. Refrig. News 1 (21): 2.

Article discusses contribution which Kelvin made to electric refrigeration.

### (7)

1927. Revised tabulation of electric refrigeration specifications. Elect. Refrig. News 2 (5): 10-11.

Tabulation of specifications for products of 18 manufacturers of electric refrigerators. A preliminary tabulation of the specifications for the output of seven manufacturers of household refrigerators appeared in Elect. Refrig. News 2 (3): 10.



## ELECTRIC REFRIGERATION (Continued)

(8) Ackerman, W. T.

1928. Electric refrigeration and its agricultural uses. Agr. Engin. 9 (1): 23-27, illus.

Primarily a report of experimental work in New Hampshire showing the use of electric refrigeration for cooling milk on dairy farms, and including a description of the type of installation and equipment for electric refrigeration used in the six farm homes where the experiments were carried on.

(9) Blinn, A.

1926. Looking into the electric refrigerator. Delineator 109 (1): 47, illus.

Popular article discussing the cost of electric refrigeration, including initial cost of equipment, cost of operation and of service, and the enumeration of advantages.

(10) Carpenter, C. U.

1926. Taking the mystery out of electric refrigeration. Elect. Refrig. News 1 (6): 2, illus.

Popular discussion of principles which govern operation of electric refrigeration.

(11) Clauss, F. R.

1928. Luxury appeal too limited, sell every day uses. Elect. Merchandising 39 (3): 76-79, illus.

Recommendation that in selling electric refrigerators more emphasis be placed on their value in safeguarding the family's health and less on their frozen dessert possibilities and that a cabinet adequate in size for the needs of the family be chosen.

(12) Committee on Relation of Electricity to Agriculture.

1928. Electricity on the farm and in rural communities. Committee on the Relation of Electricity to Agriculture Bul. 4 (1), 136 p., illus. Chicago.

Report of national investigation "designed to find out what electricity will do and what it will not do on the farm". This investigation has been carried on by the state agricultural colleges or state experiment stations at the request of the committee. Household refrigeration is discussed on pages 16-18. A table is given showing the average consumption of electricity for forty-seven boxes of different capacities in farmhouses in eleven states.

(13) Cornell, K.

1928. Fundamentals of electric refrigeration. The Home Economist 6: 29-30, 43-44, illus.

Explains method by which ice cools foods placed in the usual ice refrigerator, and then explains the cycle of operations by which an electric refrigerator produces and maintains low constant temperature needed to preserve foods.



## ELECTRIC REFRIGERATION (Continued)

(14) Miller, G. E.

1926. Electrical refrigeration for the home. Jour. Home Econ. 18: 303-307.

A lucid presentation of the essential features of electric refrigeration. Includes a discussion of the machine, the cabinet, cost of equipment, cost of operation and maintenance, and care of the equipment.

(15) National Electric Light Association.

1925. Report of electric refrigeration committee, 1924-25. Commercial National Section. 67 p., illus. New York, National Electric Light Association.

A comprehensive, but in some sections highly technical report on the state of electric refrigeration at that time. Includes report of detailed tests of several electric refrigerators and gives specifications for a number of household refrigerating machines.

(16) Whitton, M. O.

1927. The new servant. 326 p., illus. Garden City, New York, Doubleday, Page and Co.

In Chapter 13, pages 213-226, "What about electric refrigerators?" the author refers to the increasing popularity of electric refrigerators, explains physical principles involved in their construction and operation, discusses cost of the complete refrigerator and cost of operation, and gives a brief discussion of the possibilities and limitations of electrically operated refrigerators in the making of frozen desserts.

## FOOD PRESERVATION

(17) Associates of Dr. Lore A. Rogers.

1928. Fundamentals of dairy science, by associates of Lore A. Rogers in the research laboratories of the Bureau of Dairy Industry, United States Department of Agriculture. 543 p., illus. New York, The Chemical Catalog Co., Inc.

Technical discussion of constituents, physical chemistry, microbiology, and nutritional value of milk and milk products.

(18) Ayers, S. H., Cook, L. B., and Clemaer, P. W.

1918. The four essential factors in the production of milk of low bacterial count. U. S. Dept. Agr. Bul. 642, 63 p., illus.

Results of investigation of factors concerned in production of milk practically free from visible dirt and of low bacterial count. The following statement in the summary is of special significance: "Holding the milk at a temperature near 10°C. (50°F.) or lower is necessary in order to keep the bacterial count low."

FOOD PRESERVATION (Continued)

(19) Broadhurst, J., and Van Arsdale, M. B.

1924. Food in the house refrigerator. Nation's Health 6: 595-597, illus.

Report of a study in bacterial changes in relation to temperature and humidity. The experimental work extended over a period of four months. Special consideration was given to range and constancy of temperature and humidity in three types of refrigerators and related variations in bacterial content of foods under known temperature and humidity conditions. Summary contains recommendations for the housewife.

(20)

1924. Food in the house refrigerator. Columbia Univ., Teachers Col. Rec. 26: 230-245.

Reprint of article which first appeared in Nation's Health 6: 595-597, cited above.

(21) Carlsson, V.

1926. Food changes in an ice refrigerator and an electrically controlled refrigerator: A comparative study. Columbia Univ., Teachers Col. Rec. 27: 643-655, illus.

Results of experimental work in which special consideration was given to range and constancy of temperature and humidity, to general keeping qualities, and to bacterial increase in foods. Two refrigerator cabinets of same make and practically identical in size and construction were used. One was cooled with ice, in the other the cooling unit was electrically controlled.

(22)

1926. New methods raise efficiency of home refrigeration. Nation's Health 8: 233-236, illus.

Adapted by the author from the article in Columbia University, Teachers College Record 27: 643-655, cited above.

(23) Cook, F. L.

1927. Causes of food spoilage. Refrig. Engin. 14: 132-133.

Popular article compiled from set of lessons used by writer in instructing service men for a corporation manufacturing electric refrigerators.

(24) Hendrickson, J. F., and Ryan, C. B.

1927. Causes of food spoilage. Elect. Refrig. News 1 (14): 2.

Popular discussion by representatives of two companies manufacturing mechanical refrigerators.

FOOD PRESERVATION (Continued)

(25) Murray, E. M.

[1926]. Bacteriological tests on the efficiency of various types of household refrigerators. Iowa State College. Thesis submitted for M. S. degree. 51 p. [Typewritten.]

Report of a study attempting to measure accurately the deterioration of food kept at different temperatures in various types of household refrigerators. Includes report on a study of the causes of deterioration due to bacterial activity, improper care of the refrigerator, and the contributing effect of temperatures found in various types of refrigerators.

(26) Parfitt, E. H.

1925. The home refrigerator. Purdue Univ., Agr. Expt. Sta. Circ. 124, 12 p., illus.

Report of a study of the relation between temperatures obtained in two household refrigerators using ice and in a window box and the rate of bacterial growth; the relation between the amount of ice in the ice chamber and the temperatures maintained in the food compartment; and the effect of wrapping the ice upon temperatures obtained, amount of ice melted, and flavor of foods.

(27) Pennington, M. E.

1926. Why we refrigerate foods. Natl. Assoc. Ice Indus. Household Refrig. Bur. No. 6, 7 p.

Popular discussion of role of bacteria, yeasts, and molds in causing food spoilage and value of household refrigerator in retarding their growth.

(28) Rector, T. M.

1925. Scientific preservation of food. 213 p. New York, Wiley and Sons, Inc.

A presentation of principles of chemistry and bacteriology as applied to problems of food preservation. The author defines food preservation, classifies causes, and discusses methods of retarding food spoilage. The whole is a clear, logical account containing a good deal of information of interest to the scientific food analyst, and at the same time presented in a manner understandable to the intelligent nontechnical man.

(29) Thom, C.

1922. Food poisoning and its prevention. Amer. Food Jour. 17 (11): 15-16, 33, 36.

Major portion of article is devoted to a discussion of two forms of food poisoning - an acute gastro-intestinal disturbance and botulism. Suggestions for prevention are included. Among those enumerated are the following: "Moist or soft-cooked food to be held more than a few hours should be kept in a good refrigerator. If such refrigeration is impossible, the food even though showing no sign of spoilage should be recooked before serving."



## FOOD PRESERVATION (Continued)

(30) Thom, C., and Hunter, A. C.

1924. Hygienic fundamentals of food handling. 228 p., illus.  
Baltimore, Williams and Wilkins.

Very clear, comprehensive presentation of the underlying principles and problems of food preservation and spoilage.

Includes discussions of proper food standards, means of preserving food and preventing spoilage and care of the food from the time of production until it appears on the market.

(31) United States Department of Agriculture. Bureau of Home Economics.

1923. Care of food in the home. U. S. Dept. Agr., Farmers' Bul. 1374, 12 p.

The various causes of food spoilage are listed, and each is discussed in some detail. The function of the refrigerator in keeping foods in the home is discussed briefly. The importance of adequate insulation and provision for circulation is emphasized. The importance of keeping such perishable foods as milk, fresh meat, poultry, and fish at a temperature of 50°F., or less is stressed.

(32)

1923. Milk and its uses in the home. U. S. Dept. Agr., Farmers' Bul. 1359, 13 p., illus.

On pages 6 to 8 there is a section on the care of milk in the home in which emphasis is placed on keeping it at a temperature of 50°F., or less. Contains a paragraph on the care of the refrigerator.

## GAS-FIRED REFRIGERATORS

(33) American Gas Association.

[1925]. Refrigeration with gas - why and how. Report of refrigeration by gas committee. 61 p., illus. New York, American Gas Association.

Discusses reasons for refrigeration and general principles of mechanical refrigeration, comparing the compression and absorption types of machines, and describing several makes as illustrations of the latter type. Shows how refrigeration by gas may help make the gas load more even throughout the year.

(34) Hainsworth, W. R.

1927. Operating cost of household refrigeration by gas. Refrig. Engin. 13: 245-248, 252, illus.

Discusses relative efficiency and cost of electric and gas refrigeration and gives chart and table showing comparative cost of gas and electric refrigeration at various rates.

GAS-FIRED REFRIGERATORS (Continued)

(35) Hinsdale, L.

1928. Converting heat into cold. Sanitary and Heating Engin.  
107: 97-98, illus.

Brief explanation of construction of mechanism for gas-fired refrigerators and method of operation. Line drawing and photograph showing unit.

(36) Keeler, H. E.

1927. Refrigeration by direct application of heat. Gas Industry  
21: 275-279.

Explains the principles of mechanical refrigeration showing both the similarities and differences between the compression type and the type where heat is applied directly, mentioning various makes as illustrations of the latter type. This is followed by a discussion of the outlook for the gas industry in this field.

(37) Muffly, G.

1928. Silica gel, the new adsorber. What it is and how it works.  
Elect. Refrig. News 2 (15): 25, illus.

Author compares operation of compression type of refrigerating machine with that of absorption type and then shows how the adsorber, silica gel, works.

(38) Otto, S.

1927. Refrigeration with gas for homes. Elect. Refrig. News 1 (7): 7.

Process explained by the president of a corporation manufacturing gas refrigerators.

(39) Peyser, E. R.

1927. The gas system of refrigeration. House and Garden 51 (2): 80, 168, 170.

Popular article discussing operation of gas-fired refrigerators of intermittent and continuous types, cost of operation, and method of cooling. The final paragraphs sum up the salient points of the gas-fired refrigerator.

(40) Sellman, F. E.

1927. The gas fired refrigerator. Elect. Refrig. News 1 (17): 13-14, illus.

The history of this type of refrigeration is reviewed briefly and the changes necessary to meet American market requirements are enumerated.

## HOW TO USE THE HOME REFRIGERATOR

### (41) Anonymous

1926. Good refrigeration. How to obtain it in the house refrigerator. Good Housekeeping 83 (1): 97, 205, illus.

Popular article discussing method of using refrigerator and importance of correctly designed, well-insulated cabinet of good construction. The author refers to the practice of equipping the ice-cooled cabinet with mechanical units and urges the prospective buyer first to find out what servicing facilities are available.

### (42) Broadhurst, J., and Carlsson, V.

1926. Keeping food in the home refrigerator. Good Housekeeping 83 (1): 96.

Popular article in which authors discuss effect on foods of long storage in household refrigerators, especially loss of moisture, bacterial increase, changes due to action of enzymes, and possibly lower vitamin content. They urge the housewife to "use the refrigerator to make foods refreshing and palatable but do not expect from it the preservation powers of a cold-storage plant."

### (43) Jordan, R.

1927. Factors in the management of the ice cooled refrigerator in the home. Purdue Univ., Agr. Expt. Sta. Bul. 316, 32 p., illus.

Report of careful studies made of such problems as relation between amount of ice in ice chamber and temperature within the food chamber, effect of frequent opening of doors on ice consumption, on temperature in food compartment; effect of high room temperature on ice consumption, and on temperature of food compartment. The effect of various temperatures upon the keeping quality of certain foods was studied from the housekeeper's point of view. Includes brief list of references.

### (44) Pennington, M. E.

1924. The care of the home refrigerator. Natl. Assoc. Ice Indus. Household Refrig. Bur. No. 4, 4 p.  
Brief popular discussion.

### (45)

1924. Where to place food in the household refrigerator. Natl. Assoc. Ice Indus. Household Refrig. Bur. No. 3, 8 p., illus.

A popular discussion of arrangement of food in side-icer type of refrigerator and in overhead icer.

### (46)

1925. The care of the child's food in the home. Natl. Assoc. Ice Indus. Household Refrig. Bur. No. 5, 20 p., illus.

Fourteen pages are devoted to the various forms in which milk is marketed and care which each should have; the remaining pages are devoted to "supplemental foods," including orange and tomato juice, soups, meat juice, cod liver oil. Bulletin is written in simple, readable style.



## ICE AND ICE REFRIGERATION

- (47) Authenrieth, A. J., Burdick, C. B., De Celle, O. A., and others.  
1927. Ice. 103 p., illus. Chicago, Middle West Utilities Co.  
Much of this material refers to commercial refrigeration but some is of interest to the householder and to the student of refrigeration.
- (48) Bowen, J. T.  
1920. Harvesting and storing ice on the farm. U. S. Dept. Agr., Farmers' Bul. 1078, 30 p., illus.  
Discussion of sources and methods of harvesting ice and construction of various types of ice houses, with specifications.
- (49) Dixon, A. M.  
1926. Advantages of scoring ice over old methods. Ice and Refrig. 70: 252-253.  
Advantages of scored ice as stated by a representative of a plant in which an ice scoring machine has been in operation for three years.
- (50) Heilman, E.  
1928. Rural ice delivery. Ice and Refrig. 74: 329.  
Report of plan for serving rural patrons developed by a California ice company.
- (51) Pennington, M. E.  
1927. The romance of ice. Natl. Assoc. Ice Indus. Household Refrig. Bur. No. 7, [15] p., illus.  
Brief history of the use of natural and manufactured ice and how it functions in the household.
- (52) Starr, J. E.  
1927. First principles in household refrigerator construction. Ice and Refrig. 72: 178-179, illus.  
Discussion of temperature requirements for good household refrigeration, the need of proper understanding of the elementary laws of heat transfer, and effect of outside temperature, with charts showing how ice consumption and temperatures within an ice-cooled refrigerator vary with room temperature.
- (53) \_\_\_\_\_  
1927. Refrigerator temperatures. Ice and Refrig. 72: 86-87.  
Gives formulas for calculating amount of ice meltage and temperature of food storage compartment at different room temperatures when these are known for given room temperatures.

## ICE AND ICE REFRIGERATION (Continued)

(54) Votaw, G. A.

1927. The scoring of ice. Ice and Refrig. 73: 76-77.

Report of success of ice-scoring plan in Cleveland, Ohio. The scoring machine removes all guesswork in selling ice by weight and all chance of profit from short weight, it is stated.

## INSTALLING REFRIGERATORS

(55) Anonymous

1928. Pros and cons of the multiple system for apartment houses.

Elect. Refrig. News 2 (18): 5.

Includes material from bulletin issued by distributors of one of the well-known electric refrigerators. The advantages and disadvantages of three methods of making apartment-house installations are discussed, mainly from the sales viewpoint.

(56) Faherty, J. P.

1927. Outside icer in Washington, D. C. Ice and Refrig. 73: 247, illus.

Discussion of importance of selling architects, builders, and the public the idea of the outside icer as original equipment. Illustrations show method of installing.

(57) Nizer Corporation.

1927. Apartment house refrigeration. Elect. Refrig. News 2 (7): 8, 9, illus.

Lesson 21 from correspondence course offered for training of sales and service men. Describes three methods used in apartment-house installations. Gives table showing various types of construction for refrigerator walls.

(58) Northey, E. N.

1928. Care free ice refrigeration. Ice and Refrig. 74: 573-574, illus.

Discussion of outside icer and its advantages. Illustrations show cross sections of outside walls in which an outside icing door is installed.

(59) Starr, J. E.

1925. Refrigeration for hotels, markets, and dwellings. Architecture 52: 443-445, illus.

Discusses comparative cost of ice and mechanical refrigeration and the need for well-insulated cabinets for both, and two types of installations for apartment houses—the central refrigerating machine and the cabinet installation.

## INSULATION AND INSULATING MATERIALS

(60) American Society of Refrigerating Engineers

1924. Heat transmission of insulating materials. Amer. Soc. Refrig. Engin., Insulation Committee Ann. Rpt. (1922), rev. 1924. 114 p., illus. New York.

Technical discussion by a number of authorities of such topics as: the principles of heat transfer, the measurement of temperature, the plate method, the box method, the economic value of insulation, and results of tests to determine heat conductivity. Also (p. 95-114) a bibliography of the literature up to 1920 on heat insulation and heat transfer.

(61) Carpenter, R. C.

1917. The properties of balsa wood. Amer. Soc. Refrig. Engin. Jour. 3 (6): [30]-53, illus.

Report of study of balsa wood to determine its strength and insulating qualities.

(62) Deuvel, C. O.

1928. Effective moisture in the refrigerator. Refrig. Engin. 15: 89-92, illus.

Discussion of importance of insulation, effect of moisture or vapor on material, and method of moisture proofing used in the manufacture of refrigerators. Recommends the use of hot asphalt to protect the insulation. Tables are given showing effect of additional insulation and moisture on the economy of a refrigerator using in one case ice, and in another, a mechanical unit.

(63) Gates, H. B.

1927. Cork insulation - functions and uses in electric refrigeration. Elect. Refrig. News 1 (17): 15.

Review by representative of a cork company showing need of insulating material, and description of how cork grows, method of making cork board, and its characteristics.

(64) Grundhofer, E. F.

1925. An investigation of certain methods for testing heat insulators. Penn. State Col., Engin. Expt. Sta. Bul. 33, 71 p., illus.

A technical report of research on four methods of testing low temperature heat insulators and a revision of an earlier bibliography on heat insulation and heat transfer.

(65) Miller, L. F.

1927. Effect of moisture on the heat transmission in insulating materials. Refrig. Engin. 14: 141-144, 161, illus.

Results of experiments on insulating value of wood, cane, flax, and rag felt as influenced by the degree of moisture.

INSULATION AND INSULATING MATERIALS (Continued.)

(66) Peebles, J. C.

1927. Thermal insulators. Ice and Refrig. 74: 22-23.

Paper presented at meeting of National Association of Practical Refrigerating Engineers describing two methods used at Armour Institute for testing thermal insulators - the flat plate and the hot box.

(67) Stevenson, A. R., Jr.

1926. Construction and insulation of refrigerator cabinets. Elect. Refrig. News 1 (5): 5.

Refers to study by J. R. Williams made in Rochester, N. Y., in 1913, and applies findings to calculations of savings effected by adequate insulation and well-constructed doors.

(68) United States Department of Commerce. Bureau of Standards.

1927. Thermal insulation. U. S. Dept. Com., Bur. Standards Letter Circ. 227, 12 p. [ mimeographed.]

Discussion of insulation in relation to house construction, refrigeration, and cold storage followed by tables including thermal constants for various materials.

LEGAL ASPECTS

(69) Anonymous

1927. State laws relating to weighing ice. Ice and Refrig. 73: 242-243.

In 1926, the Bureau of Standards, U. S. Department of Commerce, issued the 3rd edition of its Miscellaneous Publication No. 20 entitled "Federal and state laws relating to weights and measures." In this article the state laws and regulations relating especially to the sale of ice by weight have been segregated from the great mass of other material on the 900 pages of Miscellaneous Publication No. 20 and have been arranged according to states for convenient reference.

(70)

1928. New York City adopts amended safety code affecting refrigeration. Elect. Refrig. News 2 (9): 25-27, illus.

Complete text of the revised ordinance which was formulated by a committee of the Board of Aldermen after hearings participated in by representatives of the New York City Fire Department, the Board of Fire Underwriters, the American Society of Refrigerating Engineers, the American Engineering Standards Committee, and leading manufacturers of refrigerating equipment. Although most of the ordinance applies to medium size and large commercial installations, household machines are definitely provided for.



LEGAL ASPECTS (Continued)

(71) Hill, W. P.

1924. Public regulation of the ice industry. Ice and Refrig. 67: 409-412.

Traces the legal development of the public utility idea from its inception in English law and explains operation of Oklahoma law governing the ice industry.

MISCELLANEOUS

(72) Anonymous.

1925. Costly refrigeration. Ice and Refrig. 68: 123.

Notes the cost of the enormous waste of unmetered water due to the fact that many families let the water run continuously all summer in order to chill the baby's milk and other food. This waste of water indicates the need for a good small refrigerator and education in its use.

(73) Bowen, J. T.

1914. The application of refrigeration to the handling of milk. U. S. Dept. Agr. Bul. 98, 88 p., illus.

Primarily for dairymen and farmers handling milk, but the discussion of the relation of temperature to bacterial growth and the section on insulation have special interest for those who are concerned with household refrigeration.

(74) Denton, M. C.

1916. The household refrigerator. Jour. Home Econ. 8: 660-663.

Based on J. R. Williams' study made in Rochester, N. Y., in 1913. Includes a discussion of temperature essential for effective food preservation, importance of adequate insulation and of a well-constructed lining, and the care of the refrigerator.

(75) Gray, G.

1926. Convenient kitchens. U. S. Dept. Agr., Farmers' Bul. 1513, 29 p., illus.

Contains a section headed "Refrigerator and cold cupboard," which gives suggestions for selecting a refrigerator, also a paragraph on the cold closet which in some climates serves instead of a refrigerator.

(76) Grunsky, C.

1928. Doorstep. Elect. Merchandising 39 (2): 79-80, illus.

Account of an association developed in Portland, Oregon, by electric refrigeration dealers, ice manufacturers, and distributors, power companies, and dairies to sell the idea of refrigeration.

MISCELLANEOUS (Continued)

(77) Hull, H. B.

1927. Household refrigeration. Ed. 3, rev. and enl., 491 p., illus.  
Chicago, Nickerson and Collins Co.

Technical treatise on the principles, types, construction, and operation of both ice and mechanically cooled domestic refrigerators, and the use of ice and refrigeration in the home.

(78) Jordan, R.

1926. Care and use of the home refrigerator for food preservation.  
Purdue Univ., Ext. Bul. 147, 8 p., illus.

Answers such questions as: Why use a refrigerator, what is a good refrigerator, where place food in the refrigerator, followed by discussion of points in the care of a refrigerator.

(79) Pennington, M. E.

1927. Cold is the absence of heat. Natl. Assoc. Ice Indus. Household Refrig. Bur. No. 8, 20 p., illus.

Popular discussion of the principles of refrigeration using ice. Such subjects are treated as air circulation, use of insulation, essentials of refrigerator construction. The illustrations are unusually graphic.

(80) Randolph, G. S.

1928. Merchandising refrigerators. Refrig. World 63 (3): 21-22.

Ice companies are urged to sell refrigerators, and reasons are advanced and discussed in some detail.

(81) Reese, M. J.

1922. Farm home conveniences.. U. S. Dept. Agr., Farmers' Bul. 927, 32 p., illus.

Contains a section on the construction of the so-called iceless refrigerator. This device uses evaporation of water for cooling effect and is adapted only to the more arid regions.

(82) Riek, F. O.

1926. Rhinelander handbook of refrigeration. 194 p., illus.  
Rhinelander, Wis., The Rhinelander Refrigerator Co.

Brief discussion of ice and the principles of refrigeration, followed by chapters on cork, iron, and lumber.

(83) Stanley, L.

1927. Studies in household refrigeration. Ice and Refrig. 72: 515-516.

Review of some of the facts regarding refrigeration which the housewife wants to know and discussion of need of research and value of advertising.



MISCELLANEOUS (Continued)

(84) Starr, J. E.

1926. Household refrigeration. Ice and Refrig. 71: 112.

Discussion of the efficiency of the average refrigerator and of the small household machine, and the effect of room temperature on the efficiency of the machine.

(85) Tisdale, W. E.

1926. Mechanical refrigeration. Sci. Mo. 22: 63-66.

Explanation of the general physical processes employed in the different types of refrigerating machines, followed by a discussion of several systems of refrigeration.

(86) Williams, H.

1924. Mechanical refrigeration. 501 p., illus. London, New York, Pitman and Sons.

Primarily a technical discussion of commercial cold storage plants and ice making plants, but the general principles explained in the first few chapters and Chapter 8 on insulation apply to household refrigeration, as well. Chapter 12 on articles in cold storage is also of interest.

REFRIGERATOR DESIGN AND CONSTRUCTION

(87) Anonymous.

1927. Specifications for household refrigerators. Ice and Refrig. 73: 137-139.

Seven main points to consider in refrigerator design are listed and discussed briefly.

(88)

1928. Three points cited as essentials in good cabinet construction. Elect. Refrig. News 2 (18): 12.

"Refrigeration, whether by means of ice or a mechanical unit, is dependent upon a cabinet that combines structural strength, insulation and a sanitary lining ... A seamless sanitary lining enclosed in insulation of low heat conductivity and firmly set in on a strong cabinet will keep a low interior temperature. More than mere low temperature is refrigeration - which means an even cold air constantly in circulation, plus a fair amount of humidity to prevent dehydration."

(89) Pennington, M. E.

1928. The construction of household refrigerators. Ice and Refrig. 74: 521-525.

Paper presented at the Fifth International Congress of Refrigeration, reviewing progress in household refrigerator construction and stating the requisites of an efficient cabinet.

## REFRIGERATOR DESIGN AND CONSTRUCTION (Continued)

(90) Robertson, G. A.

1927. Shape of the ice household refrigerator. Refrigeration 42 (3): 58-59.

Calls attention to such matters as the relation between the shape of the refrigerator and the cost of operation, the relation between the total volume in cubic feet and the cubic feet of space provided for the ice compartment and for the food compartment; the relation between the total area and the outside dimensions. These points are further emphasized in a "Table of physical characteristics of 100 lb. side icer refrigerators," which gives in tabular form such information as the volume, area, inside dimensions of twelve 100-pound refrigerators. The author concludes that there is need for careful experimental work on efficient design and proportions for ice-cooled refrigerators. At present, it is stated, the blame for poor results from the refrigerator is placed on the ice man when it is the cabinet manufacturer who is primarily responsible.

(91) Sealey, P. T.

1928. "Finishing" the refrigerator. Elect. Refrig. News 2 (16): 5.

Essential qualities of a refrigerator lining as stated by a representative of a company manufacturing porcelain enamel, and a description of the process of manufacture of this material.

## SERVICING HOUSEHOLD REFRIGERATORS

(92) Evans, F.

1927. A doctor of ice boxes. Refrig. World 62 (1): 15, illus.

Representative of ice company tells of success of plan for repairing refrigerators in service.

(93) MacCalla, C. S.

1927. Must have service men on the job for quick action. Elect. Refrig. News 1 (17): 2.

States that electric refrigerator should be sold as a service, not as an article of furniture, and that provision for thorough and immediate service is an essential to electric refrigerator merchandising.

## SIMPLIFICATION AND STANDARDIZATION

(94) Anonymous.

1927. Simplification of refrigerators. Ice and Refrig. 73: 139; Elect. Refrig. News 1 (22): 1.

Report of meeting held at Cleveland, Ohio, July 27, 1927, to consider desirability of applying principles of simplification and standardization to refrigerator design. Meeting was arranged by Division of Simplified Practice, U. S. Department of Commerce. A list of the personnel attending and their affiliations is included.

SIMPLIFICATION AND STANDARDIZATION (Continued)

(95) Anonymous.

1928. Conference on domestic refrigerators. Ice and Refrig. 74: 454.

Report of a conference held in New York City, March 30, 1928, to consider standards and specifications for household refrigerators. Meeting was arranged by American Engineering Standards Committee at the request of refrigerator manufacturers, ice manufacturers, American Society of Refrigerating Engineers, American Home Economics Association, American Institute of Architects, and others.

(96)

1928. Conference to cut number of ice cake sizes. Elect. Refrig. News 2 (20): 1, 20.

Recommendations of simplified practice committee of the refrigeration industries regarding weight and dimensions of ice cakes. Also includes history of simplification movement as it applies to household refrigerators.

(97) American Engineering Standards Committee.

1928. Year Book American Engineering Standards Committee. 87 p. New York, American Engineering Standards Committee.

Persons interested in following the progress of the recently inaugurated project on standardization of household refrigerators, or in the proposed safety code for mechanical refrigeration now under consideration, will find in this and preceding year books much valuable information concerning the organization of this committee, the scope of its activities, and the procedure in formulating a standard.

(98) National Association of Practical Refrigerating Engineers.

1928. Proceedings of the eighteenth annual convention. Ice and Refrig. 74: [1]-33.

On page 8 is a report of personnel, function, and work of the American Engineering Standards Committee.

SURVEYS

(99) Anonymous.

1926. Status of electric refrigeration and national refrigeration survey. Elect. World 88 (18): [895]-913, illus., and supplement, sect. 2, 12 p.

Analysis of nation-wide survey tabulated in section 2, with discussion of its meaning for the future of electric refrigeration.

(100)

1926. A valuable and interesting survey. Natl. Assoc. Ice Indus., Publicity and Sales Bul. 5 (11): 2, 6.

Report of survey made by ice company of Coshocton, Ohio, of 3,000 homes of which 1,751 used ice and 10 had mechanical refrigeration.



SURVEYS (Continued)

(101) Anonymous.

1927. Per capita consumption of ice. Ice and Refrig. 73: 232.

Report of study made by an ice company to determine the variation in per capita consumption due to climatic condition, degree of urbanization, difference in living habits, and availability of natural ice.

(102)

1927. Plans for advertising the ice industry in 1928. Ice and Refrig. 73: 211, 214.

Refers to study made by the Committee on National Educational Publicity of the National Association of Ice Industries of cost of ice service in average household. Data taken from ice bills of 4,000 users are tabulated for three groups of homes.

(103)

1927. Power company to make survey of Texas farms. Elect. Refrig. News 2 (6): 10.

Account of experiment being conducted by number of Texas power companies to extend use of electrical energy to various kinds of farm operations. A cooperative plan has been worked out with the Texas Agricultural College for making this study on 25 farms for three years.

(104)

1928. Annual report of ice prices. Ice and Refrig. 74: 477-485.

Statistical summary of ice prices for 1928 as they prevail in many cities and towns throughout the United States and Canada. Data furnished by approximately 420 ice companies. Such a summary is an annual feature of the May issue of Ice and Refrigeration.

(105) Williams, J. R.

1913. A study of refrigeration in the home and the efficiency of household refrigerators. Third International Congress of Refrigeration Rpt. Eng. ed. vol. 3: 9-20. Abstract in Jour. Amer. Med. Assoc. 61: 932-935, and Expt. Sta. Rec. 30: 165-166.

Report of first extensive study of refrigeration in the home. Approximately 500 homes in Rochester, N. Y., were visited and data obtained on the following points: Facilities for care of milk in the home; temperature measurements of refrigerators, cellars, pantries; make, size and description of refrigerator used; amount of ice used, cost. The conclusion given is that an efficient refrigerator in the home is a necessity to protect milk and other perishable foods from rapid bacterial decomposition.

TESTS OF REFRIGERATOR CABINETS AND OF REFRIGERATING MACHINES

(106) Anonymous.

1925. Tests on household refrigerator. Ice and Refrig. 68: 356, illus.

Report of tests on an ice-cooled refrigerator by J. C. Smallwood in the physical laboratories of Johns Hopkins University. Tables show the temperature maintained in each of four places in the refrigerator. The room temperature is given, also the number of pounds of ice melted. The insulating value of the walls is calculated.

(107)

1926. Efficiency test of domestic refrigerators. Ice and Refrig. 70: 305-310, illus.

Ten refrigerators, identical except as to insulation, were tested by G. F. Gebhardt and J. C. Peebles, at the Armour Institute of Technology, Chicago, Ill. Results, giving rate of cooling, ice consumption and temperatures maintained, show the relative values of different amounts and kinds of insulation.

(108)

1927. Analysis of household refrigerator tests. Ice and Refrig. 73: 230-231.

Compilation of "tests made by recognized authorities on 23 different household refrigerators, all about same rated ice capacity and built by 15 well-known manufacturers." Data given in published reports of the tests are presented in tabulated form. Refrigerators are designated by numbers.

(109) Bright, G. B.

1927. Comparative tests of household refrigerating machines. Refrig. Engin. 13: 323-352, illus.

Technical report of detailed comparative results of a comprehensive study of the operation of several machines, operating in turn on several refrigerators.

(110) National Electric Light Association.

1925. Report of electric refrigeration committee, 1924-25. Commercial National Section. 67 p., illus. New York, National Electric Light Association.

Includes on pages 34 to 58 detailed report of tests of electric and ice-cooled refrigerators.

(111) Pennington, M. E.

1927. Testing and grading household refrigerators. Ice and Refrig. 73: 330-333, illus.

Report of study made at Columbia University, New York City, of seven ice-cooled refrigerators, carried on in cooperation with the National Association of Ice Industries.

TESTS OF REFRIGERATOR CABINETS AND OF REFRIGERATING MACHINES (Continued)

(112) Starr, J. E.

1926. Tests on household refrigerating machines. Ice and Refrig.  
70: 517-518.

A criticism of sections of the 1925 report of the  
National Electric Light Association.

(113) United States Department of Commerce. Bureau of Standards.

1915. Measurements for the household. U. S. Dept. Com., Bur.  
Standards Circ. 55: 50-54, illus.

Principles of refrigeration are discussed, likewise  
operation of an ice-cooled refrigerator. Table is given  
showing results of tests on nine refrigerators.

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SELECTED LIST OF PERIODICALS CONTAINING MATERIAL ON HOUSEHOLD REFRIGERATION

Periodicals containing abstracts of books and articles on refrigeration

Journal of Home Economics (Baltimore)  
Refrigerating Engineering (New York)  
Experiment Station Record (U. S. Department of Agriculture, Washington)

Technical periodical on refrigeration

Refrigerating Engineering (New York)  
The official journal of the American Society of Refrigerating Engineers.

Technical periodicals containing occasional articles on refrigeration

Agricultural Engineering (Mt. Clemens, Mich.)  
Architecture (New York)  
Journal of Home Economics (Baltimore)  
Journal of the American Society of Heating and Ventilating Engineers (New York)  
Teachers College Record (New York)

Periodicals containing occasional articles on household refrigeration, generally popular in character

American Journal of Public Health and The Nation's Health (New York)  
Delineator (New York)  
Forecast (New York)  
Good Housekeeping (New York)  
Home Economist (New York)  
House and Garden (New York)  
House Beautiful (Boston)  
Modern Priscilla (Boston)  
Popular Mechanics Magazine (New York)  
Popular Science Monthly (New York)  
Sanitary and Heating Engineering (New York)  
Scientific American (New York)  
Scientific Monthly (New York)

Trade Journals for the refrigeration industry

Cold Storage (London)  
Electric Refrigeration News (Detroit)  
The business newspaper of the electric refrigeration industry.  
Devotes most of its space to the household field.  
Ice and Cold Storage (London)  
Ice and Refrigeration (Chicago and New York)  
The official organ of the American Institute of Refrigeration and the National Association of Ice Industries and other trade and professional organizations  
Refrigerating World (New York)  
Refrigeration (Atlanta)

SELECTED LIST OF PERIODICALS CONTAINING MATERIAL ON HOUSEHOLD REFRIGERATION  
(Continued)

Other trade journals containing occasional articles on refrigeration

American Gas Journal (New York)

Electrical Merchandising (New York)

Electrical Record (New York)

Electrical World (New York)

Gas Age-Record (New York)

Gas Industry (Buffalo)



